

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions, and listings, of claims in this application:

1. (Previously Presented) A discharge control unit comprising:
a heating portion including one or a plurality of heat-generating bodies and driver ICs
electrically connected to one or a plurality of heat-generating bodies and caused to generate heat
by flowing an electric current to an optional point of one heat-generating body or selectively
flowing the same to said plurality of heat-generating bodies; and
a heat generation portion insulating film covered on at least the heat-generating bodies;
and discharge electrodes, to which voltage is applied, disposed at the heat generation portion
insulating film so as to correspond to one or a plurality of heat-generating bodies;
wherein the discharge electrodes are formed to be like a rectangular or square flat plate
including a common electrode portion and discharge portions, and discharge is carried out from
discharge portions of the discharge electrodes selectively heated by the heat-generating bodies.

2. (Previously Presented) A discharge control unit comprising:
a heating portion including one or a plurality of heat-generating bodies and driver ICs
electrically connected to one or a plurality of heat-generating bodies and caused to generate heat
by flowing an electric current to an optional point of one heat-generating body or selectively
flowing the same to a plurality of heat-generating bodies; and

a heat generation portion insulating film covered on at least the heat-generating bodies;
and

discharge electrodes, to which voltage is applied, disposed at the heat generation portion insulating film so as to correspond to one or a plurality of heat-generating bodies;
wherein the discharge electrodes include a plurality of individual discharge electrode portions and a common electrode portion formed to be wider than the width of the individual discharge electrode portions, which connects one-sided ends of the plurality of individual discharge electrode portions, and discharge is carried out from discharge portions of the discharge electrodes selectively heated by the heat-generating bodies.

3. (Previously Presented) A discharge control unit according to claim 2, wherein the individual discharge electrode portions of the discharge electrode are provided with split electrodes divided into a plurality.

4. (Previously Presented) A discharge control unit according to claim 2, wherein the plurality of individual discharge electrode portions are disposed in chessboard patterns.

5. (Previously Presented) A discharge control unit according to claim 1, wherein the plurality of heat-generating bodies are disposed in chessboard patterns.

6. (Previously Presented) A discharge control unit according to claim 2, wherein the discharge electrode includes an auxiliary common electrode portion for connecting the other end portions of the plurality of individual discharge electrode portions.

7. (Previously Presented) A discharge control unit according to claim 1, wherein the discharge electrode includes the common electrode portion and the discharge portion and includes a conductive material layer formed on the surface of at least the common electrode portion of the discharge electrode.

8. (Previously Presented) A discharge control unit according to claim 6, including a conductive material layer formed on the surface of at least the auxiliary common electrode portion of the discharge electrodes.

9. (Previously Presented) A discharge control unit according to claim 1, including an electrode protection thin film layer formed on the surface of the discharge electrodes.

10. (Previously Presented) A discharge control unit according to claim 1, including a coating film covered on the discharge electrode other than the discharge portion.

11. (Original) A discharge control unit according to claim 10, wherein the discharge control unit includes recesses and projections formed on the surface of the coating film.

12. (Previously Presented) A discharge control unit according to claim 1, including an induction electrode formed to be spaced from the discharge electrodes and to be insulated therefrom.

13. (Previously Presented) A method for controlling discharge of a discharge control unit according to claim 1, which carries out multi-divided discharge control by dividing heating of the discharge electrode by the heating portion into a plurality of times and repeating the same.

14. (Previously Presented) A method for controlling discharge of a discharge control unit according to claim 1, including a step of preheating at least the discharge electrodes.

15. (Currently Amended) A method for producing a discharge control unit ~~according to claim 7,~~

the discharge control unit comprising:

a heating portion including one or a plurality of heat-generating bodies and driver ICs
electrically connected to one or a plurality of heat-generating bodies and caused to generate heat
by flowing an electric current to an optional point of one heat-generating body or selectively
flowing the same to said plurality of heat-generating bodies; and

a heat generation portion insulating film covered on at least the heat-generating bodies;
and discharge electrodes, to which voltage is applied, disposed at the heat generation portion
insulating film so as to correspond to one or a plurality of heat-generating bodies;

wherein the discharge electrodes are formed to be like a rectangular or square flat plate including a common electrode portion and discharge portions, and discharge is carried out from discharge portions of the discharge electrodes selectively heated by the heat-generating bodies; and

wherein the discharge electrode includes the common electrode portion and the discharge portion,

the method comprising:

~~wherein the step of forming a discharge electrodes on a~~ the heat generation portion insulating film corresponding to a heat-generating body includes including a step of forming a conductive material layer on the surface of at least the common electrode portion of the discharge electrodes.

16. (Currently Amended) A method for producing a discharge control unit according to claim 8,

the discharge control unit comprising:

a heating portion including one or a plurality of heat-generating bodies and driver ICs electrically connected to one or a plurality of heat-generating bodies and caused to generate heat by flowing an electric current to an optional point of one heat-generating body or selectively flowing the same to a plurality of heat-generating bodies;

a heat generation portion insulating film covered on at least the heat-generating bodies;
and

discharge electrodes, to which voltage is applied, disposed at the heat generation portion
insulating film so as to correspond to one or a plurality of heat-generating bodies;

wherein the discharge electrodes include a plurality of individual discharge electrode
portions and a common electrode portion formed to be wider than the width of the individual
discharge electrode portions, which connects one-sided ends of the plurality of individual
discharge electrode portions, and discharge is carried out from discharge portions of the
discharge electrodes selectively heated by the heat-generating bodies, and

wherein the discharge electrode includes an auxiliary common electrode portion for
connecting the other end portions of the plurality of individual discharge electrode portions,

wherein the step of the method comprising:

forming discharge electrodes on a the heat generation portion insulating film
corresponding to a heat-generating body includes including a step of forming a conductive
material layer on the surface of at least the auxiliary common electrode portion of the discharge
electrodes.

17. (Currently Amended) A method for producing a discharge control unit according to
claim 9,

the discharge control unit comprising:

a heating portion including one or a plurality of heat-generating bodies and driver ICs
electrically connected to one or a plurality of heat-generating bodies and caused to generate heat
by flowing an electric current to an optional point of one heat-generating body or selectively
flowing the same to said plurality of heat-generating bodies; and

a heat generation portion insulating film covered on at least the heat-generating bodies;
and discharge electrodes, to which voltage is applied, disposed at the heat generation portion
insulating film so as to correspond to one or a plurality of heat-generating bodies;

wherein the discharge electrodes are formed to be like a rectangular or square flat plate
including a common electrode portion and discharge portions, and discharge is carried out from
discharge portions of the discharge electrodes selectively heated by the heat-generating bodies,
the method comprising:

wherein the step of forming discharge electrodes includes including a step of forming an
electrode protection thin film layer on the surface of the discharge electrode.

18. (Currently Amended) A method for producing a discharge control unit according to
claim 10,

the discharge control unit comprising:

a heating portion including one or a plurality of heat-generating bodies and driver ICs
electrically connected to one or a plurality of heat-generating bodies and caused to generate heat
by flowing an electric current to an optional point of one heat-generating body or selectively
flowing the same to said plurality of heat-generating bodies; and

a heat generation portion insulating film covered on at least the heat-generating bodies;
and discharge electrodes, to which voltage is applied, disposed at the heat generation portion
insulating film so as to correspond to one or a plurality of heat-generating bodies;

wherein the discharge electrodes are formed to be like a rectangular or square flat plate including a common electrode portion and discharge portions, and discharge is carried out from discharge portions of the discharge electrodes selectively heated by the heat-generating bodies,

the method comprising:

wherein the step of forming discharge electrodes includes including a step of forming a coating film covered on the discharge electrodes other than the discharge portions.

19. (Currently Amended) A method for producing a discharge control unit according to claim 12,

the discharge control unit comprising:

a heating portion including one or a plurality of heat-generating bodies and driver ICs electrically connected to one or a plurality of heat-generating bodies and caused to generate heat by flowing an electric current to an optional point of one heat-generating body or selectively flowing the same to said plurality of heat-generating bodies; and

a heat generation portion insulating film covered on at least the heat-generating bodies; and discharge electrodes, to which voltage is applied, disposed at the heat generation portion insulating film so as to correspond to one or a plurality of heat-generating bodies;

wherein the discharge electrodes are formed to be like a rectangular or square flat plate including a common electrode portion and discharge portions, and discharge is carried out from discharge portions of the discharge electrodes selectively heated by the heat-generating bodies, and an induction electrode is formed to be spaced from the discharge electrodes and to be insulated therefrom,

the method comprising a step of forming the induction electrode on the upper surface of the heat generation portion insulating film, being spaced from the end portion at the heat-generating body side of the discharge electrode in the horizontal direction, and a step of forming an induction electrode insulating film, which covers the induction electrode, on the upper surface of the heat generation portion insulating film.

20. (Previously Presented) A discharge control unit according to claim 2, wherein the plurality of heat-generating bodies are disposed in chessboard patterns.

21. (Previously Presented) A discharge control unit according to claim 2, wherein the discharge electrode includes the common electrode portion and the discharge portion and includes a conductive material layer formed on the surface of at least the common electrode portion of the discharge electrode.

22. (Previously Presented) A discharge control unit according to claim 2, including an electrode protection thin film layer formed on the surface of the discharge electrodes.

23. (Previously Presented) A discharge control unit according to claim 2, including a coating film covered on the discharge electrode other than the discharge portion.

24. (Previously Presented) A discharge control unit according to claim 2, including an induction electrode formed to be spaced from the discharge electrodes and to be insulated therefrom.

25. (Previously Presented) A method for controlling discharge of a discharge control unit according to claim 2, which carries out multi-divided discharge control by dividing heating of the discharge electrode by the heating portion into a plurality of times and repeating the same.

26. (Previously Presented) A method for controlling discharge of a discharge control unit according to claim 2, including a step of preheating at least the discharge electrodes.